# Territory as a legible result of complex processes and a resource for action (Debate paper)

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## 1. The "spatial turn", or the success of territories

Several signs indicate that territories have been a successful theme in social sciences since the 1980s. We can briefly mention the ways this theme has been used in different disciplines, although each adopts its own definition of the term[2]. Firstly, anthropologists are developing research on territoriality applied not just to traditional societies, but to so-called modern societies (households, urbanization, networks, etc.). More generally, they question the symbolic dimension of territories, including community bonds (diasporas' imagined nations, the dialectic between breaking from an original society and recomposing identities in new local territories, the myth of going home, etc.).

Similarly, historians have renewed their approach to territories over the last few years. Traditionally, historians viewed space through the notions of state, frontiers and distance. Some new history studies have centred on specific territories, although within classic territorial contexts (countries, nations, villages, etc.); and space has been at the heart of major historical studies, such as Pierre Chaunu's work on transatlantic trade, Fernand Braudel on the Mediterranean, etc. However, at the end of the 1980s, the theme of territories started making a strong comeback thanks to the progression of interdisciplinary studies. History looks at spatial processes (coming close to the notion of "territory") more than ontological or political space; no longer a given absolute, but an element built by humans, hence the interest in landscape, representations (mental maps), domestic space, and the environment – in other words, the space built by collective stakeholders addressing social, sectional, cultural issues and involved in new systems of governance.

Economists are also aware of this "spatial turn", in particular in their work on unequal income distribution in the world, and on trend for geographically concentrating production – which earned a Nobel Prize for the geographer Paul Krugmann. The mainstream had no answer to thess questions, since the neo-classical economic area was reduced to distance and cost. Trade barriers were for a long time considered as "imperfections" hindering the existence of an ideal market supposed to ensure prosperity for all. Territory was stripped of its content, with no specific identity, to become a residue; according to the general equilibrium theory, spatial inequalities are destined to diminish. Yet the forces of agglomeration are strong and go against the idea of an equilibrium: returns to scale and positive externalities constitute centripetal forces, leading to what is known as the cumulative advantages of territories (as

[1] Ce texte a fait l'objet de critiques et compléments de la part du Bureau du GIS CIST, en particulier de Chloé Didelon, Timothée Giraud et Marta Severo.

[2] This section results from CIST's preparatory work for the symposium, in particular contributions from Martine Hovanessian, Jean-Paul Billaud, Jean-Yves Moisseron, Hervé Brédif and Marie-Louise Pelus-Kaplan.

opposed to the comparative advantages of Simon Kuznets and Jeffry Williamson, heirs to Adam Smith, who saw the general equilibrium as a process leading to a downward trend in territorial inequalities). More recent studies view territory as a resource, even a production factor, to the point of conceptualizing the notion of territorial capital. Territorial practices (planning) and territorial policies are central to the explanation and recommendations. In the face of increasingly complex management modes, constraints and reference frameworks, territorial development stakeholders call for the knowledge and knowhow needed to form new skills.

At the frontier of economics, law and political science, a debate is also developing around the term "common good" (often including a vital territorial component: water, air, forests, pasture, etc.) sanctioned by the recent Nobel Prize for Economics awarded to Elinor Ostrom (a political scientist), who showed that along with private appropriation and public management (the state), social communities can manage common goods in an optimum economic way through institutional set-sups. In addition, in the field of the "convention economy", sociologists, political scientists and other non-economists working on the specific cultural and institutional features of different countries have identified divergent national trajectories regarding globalization; in other words, confrontation with globalized standards produces different effects and depends on a territory's specific features.

Geography itself has undergone what might be described as a "territorial turn": the increasing success of the term territory over the last twenty years has both enriched and threatened geographic science. It has made it possible to talk of the mechanisms (political, institutional, financial, etc.) of producing space, to highlight local interactions, and give more room to what has become known as the "stakeholder game". Theoretical geography and spatial analysis have explicitly taken this conceptual development into account by integrating into classic spatial interaction models (based on the continuous effects of distance) barrier parameters, or in other words, territorial interaction parameters (based on the discreet effect of a frontier that sharply reduces relationship probabilities). Although the idea was not new, since it dates back to work by August Lösch, it took a long time for these territorial effects to be considered as intrinsic components of stakeholder behaviour rather than simple residues. Tobler's first law of geography ("Everything is related to everything else, but near things are more related than distant things") can now be supplemented by a second law that considers breaks in frontiers ("Everything is related to everything else, but more relationships exist between things that belong to the same territory than between things separated by frontiers") (Grasland C., 2009).

Many other disciplinary or thematic examples confirm the renewed success of the theme of territories over the last few decades. What is the explanation for this?

## 2. Territory as the legible result of complex processes

Our hypothesis is that the success of the notion of territory can be explained by its "inclusive" quality as a medium for inscribing the result of complex processes that can be interpreted for analysis and mobilized for action. We will now attempt to clarify this proposal.

### *2.1 The complexity moment…*

The notion of "complexity" to consider contemporary societies dates from the 1970s. Theories on complexity or complex systems, developed for example by Edgar Morin, have

been used to analyze large-scale systems comprising numerous interacting parts that are non-linear, self-organized and difficult to model[3]. The concept that emerged forty years ago has since proved itself to be relevant. The growing complexity of human organizations and their interaction with the environment requires devising appropriate conceptual and technical tools.

What is true for social sciences is also true for new disciplines emerging in this context, such as information sciences, and of course self-proclaimed "hard" sciences – "complexity" is viewed by some as a suitable term to describe the standard separation between "hard" and "soft" science. For example, modern biology derived from the discovery of genetic coding in the 1960s quickly adopted the notion of "biocomplexity" to attempt to understand the hitherto unknown network of interactions associating DNA with proteins (not automatic coding but processes with multiple determinants and multiple paths, feedback loops, etc. See research by Henri Atlan). According to immunologist George Klein, "*Biologists must not only accept to live with complexity but to love complexity*" and must work with other disciplines to help them deal with it. A similar route is apparent in the "new geography" that emerged in the French-speaking world in the sixties and seventies: rather than simply adopting quantitative methods, it is also characterized by the discovery of systemic analysis, which serves as a kind of sesame that opens bridges to other disciplines (e.g. computing, physics, ecology) and ends up with greater participation from some geographers in information or complexity sciences.

As the outcome of long-running trends, the contemporary scientific moment is therefore marked by *more cross-cutting* between disciplines4; between theory, modelling, observation and simulation; between basic science and applied science; between science and social practices. This cross-cutting has of course always existed, but particularly since the arrival of complexity and the more widespread use of digital tools, which if not common are at least compatible between spheres. As we will see, this justifies the highly interdisciplinary dimension of territorial sciences and their organic connection to social demand.

Looking at social issues, four interlinked transformations explain the advent of society as an infinitely complex combination that can be summed up in four contemporary paradigms.

### *2.2. ... and its new paradigms: technical (accessibility), cultural (innovation), economic (market) and political (deregulation)*

#### 2.2.1 Technical

By the new technical paradigm, we mean the two major (connected) transformations of recent decades, i.e. the mobility revolution (of people, goods and information) and the digital revolution. The digital revolution is clearly radically changing working methods in every sector of activity; but in particular, the interoperability of digitalized information opens up a potentially infinite field of knowledge and action since it makes permeable many traditional dividing walls: between economic branches, between public and private spheres, between

[3] There are two main approaches to complexity: the first (that of Edgar Morin and Anthony Wilden) is connected to the issue of uncertainty in knowledge and overcoming the traditional disjunction between the subject of knowledge (the observer) and its object, with all of the related social and ethical implications. The second (that of the Santa Fe Institute on complex systems founded in the 1980s) is based on computational tools for modelling "adaptive complex systems" comprising a very high number of components that are independent by nature and closely interconnected and interactive, and associating neighbouring scientific fields like physics, chemistry, biology and ecology in a shared mathematical framework.

[4] Interdisciplinarity is at the heart of complex systems; one of the founders of the Santa Fe Institute, Murray Gell-Mann, has worked on the interaction between particle physics and the biological theory of evolution, etc.

administrators and the administrated, between the professional and domestic domains, between production and consumption, reception and production of media information, science and art.

The notion of interaction is becoming central to social production, and the notion of accessibility (to data, goods, services, territories, wellbeing, etc.) is so current that *hyper* accessibility is now established as a new contemporary demand. In recent years, numerous studies have shown how our space-time has changed: speed is both the condition of this hyper accessibility and one of its limiting factors (along with connectedness); processes are speeding up, interactions are multiplying. The acceleration of time ultimately translates into a fragmented succession of "immediacies" – the victory of "real time" (Virilio, 1995). Space is becoming so affected by "generalized mobility" (the *ideology* of generalized mobility according to Allemand, Ascher and Lévy5) that new social questions emerge, like the right to move, the basis of a "universal mobility service" (Ascher, 2005). In the attempt to regulate this generalized mobility, Nigel Thrift (2012) goes as far as wondering whether tracking systems (e.g. barcodes, SIM cards, RFID technology) will not generate a "new world order". The management of this reconfiguration of space-time has been handed over to information processing systems, which occupy the dominant position predicted by Nicholas Negroponte over fifteen years ago in his book, "*Being digital*" (Negroponte, 1995). These systems make it possible to manage this complexity (operational dimension), make it easier to monitor (political or policing dimension) and easier to consider (cognitive dimension).

### 2.2.2 Cultural

The cultural dimension of the new contemporary paradigm resides in the move from an architecture of meaning defined by conservation and repetition, in other words, culture defined by its relationship to the past, to an architecture defined by creation, in other words, culture defined by its relationship to the future. Jean-Paul Sartre predicted this when he said, "existence precedes essence" – it is not what we are that determines our action, it is our projects and action that define who we are. The historic curve of this transformation fits into a long time line. Marcel Gauchet (1985) dates its beginnings to the Christian era, or even since the axial period in human history, in the middle of the first millennium before Christ; Cornelius Castoriadis (1996) sees the Ancient Greek city and the modern Western era as the two key moments of thought and political action of the self-instituted "autonomy" of societies: you are what you do, whether individually or collectively. Yet it was not until the 20th century that society defined by its project became the dominant model – at least in the West – despite resistance from societies founded on the attribution of social status and therefore defined mostly by reference to the past.

Another way of putting it is to take up Louis Dumont's observation that, in relationships between groups and individuals, the cursor has moved radically close to the latter; yet the "society of the individual" is characterized by the creation of oneself (order of autonomy) while holism was characterized by the repetition of standards (call to social order). The modern cultural paradigm – complementing the hyper accessibility paradigm – is the transgression of boundaries that results from breaking free from attributed status. Traditional transcending categories (such as the state, God, the king, the people, Socialism, etc.) are brought into question; whether it is accepted or challenged, meaning is no longer immediately

[5] S. Allemand, F. Ascher and J. Lévy, Ed., 2004

attributed, but rather produced by transgressing traditional frontiers, by social innovation, and by refusing the arguments of authority; meaning is now created rather than transmitted.[6]

### 2.2.3 Economic

The economic dimension results from the supposed triumph of the paradigm of the market and globalized capitalism, i.e. a system in which goods and services are traded and produced freely to respond to an irrepressible trend of accumulation, and in which the vision of the world makes growth the only solution to contemporary problems. We only look briefly at the well-known aspects of this paradigm:

- The "Washington Consensus" set up in the neo-liberal context of the breakdown of the socialist system after 1989-1991, declared that this system is optimal and that growth is strongest when this "pure and perfect" competition (i.e. diverse stakeholders and absence of monopoly, standardized products, market transparency, free entry and exit, free circulation of production factors) is as wide as possible and, preferably globalized. Territories in competition become just another good.

- The market economy paradigm is so powerful that it extends to all societal aspects, since the trend to commodify all human relations has given shape to the notion of a market *society*.

This paradigm is increasingly the object of criticism, in particular since the political shock of 11 September 2001 and the major economic crisis that began in 2008. However, an alternative vision of the world has not yet taken its place, despite the rise of emerging economies and regional economic alliances, which indicate the advent of a World system operating in a more polycentric and "regional" way.

### 2.2.4 Political

The political paradigm is centred on the globalization process that means going beyond the nation-state framework, contesting a single, transcending normative framework, or even contesting any normative framework (which some people call the revenge of economics and society on politics, as seen by the deregulation phase in the 1980-1990s). It is the revenge of informal on formal, stakeholders on the system, civil society on the state, creativity on control, horizontality on verticality, and individuals on structures, with the potential for "A global order in which solidarity is free from state interference" (Badie, 1995). A single nation-state is succeeded by multiple normative sources – norms that are now produced rather than inherited. New rules are emerging, and their binding character no longer necessarily comes from their constitutional origin; they are produced by numerous and not always clearly identified stakeholders (ONU or Bretton Woods institutions, the European Union, NGOs, trade unions, firms, etc.). As to norms, they now extend far beyond the technical and economic domain and concern ethics, the environment and the social sphere; they sometimes go beyond the domain of regulation (e.g. notion of corporate social responsibility). Some of these new norms start off as incentives but ultimately become the rule: the OECD makes

[6] Like Bruno Latour, we might question the reality of this transformation, which appears to result from discourse rather than reality: have we ever been modern? Cf. Latour (1991) and (2012). In any case, this paradigm of transgression and self-production is increasingly contested; mentions of the impossible and a call to order of religious, symbolic or environmental limits are recurrent, but not yet in a position to form a new framework of thought.

"Recommendations" that states feel obliged to include in their legal system, the ILO makes "Declarations", the World Bank produces "Guidelines", and NGOs threaten to "name and shame" any company that does not respect ethical codes or fundamental rights, etc.

### *2.3 The consequences of these new paradigms on the consideration of territory*

These new paradigms have several consequences of interest to the establishment of a territorial science.

The first of these is the *need to renew unified representations of the social narrative*. The diverse references available (symbolic, cultural, identity-based, technical, local or international) make it more complicated to establish a reference framework that would be comparable, and so interchangeable from one individual, or from one group, to another. Yet to mobilize a person or a society requires a sufficiently unified representation to establish action. Although long-standing organizations (like the state or religion) still attempt to play this unifying role, the onus is largely on individuals or social groups in all their diversity to put together their representation of the world using the multiple elements at their disposition. The impression here is that territory could be mobilized to lend a more consistency to a unified collective representation.

The second consequence lies in the *new relationship between substantive contents (truth, justice, etc.) and the methods and tools for creating them*. Every society needs to draw up its narrative, and so the way in which its basic materials and values are organized is as important as their content. We therefore move from teleology to methodology, shown for example by the prevalence of a notion of justice similar to Rawls' theory, in which transparency and *procedural* equity of the conditions of justice count as much as the substantive content of Good. This corresponds to a general transformation of contemporary societies, defined less by the ends than by the means, less by the law than by contracts, less by the absolute exteriority of foundations than by results, less by ideology than by practical realities, less by theoretical unity than by processing numerous quantities of data7.

The third consequence is the *changing relationship between knowledge and society*. A society centred on hyper-accessibility, projects and the production of meaning, requires participation from all stakeholders. The world of knowledge, especially sciences, is led to interact with increasing numbers of social stakeholders. Knowledge is less and less accepted as being reserved to technocrats and experts. The paradox is clear: its growing complexity means that this knowledge is increasingly the affair of experts, which is contradictory with the society of the individual (democracy, or, as Castoriadis would call it, autonomy) and its implied shared access to knowledge, *co-construction* of objectives and decisions. Which raises the need to make stakeholders widely aware of the challenges; and highlights the importance of tools to represent knowledge, visualize information and debates. Alongside political democracy, the inevitable "technical" or "participative" democracy must now replace opacity with transparency in a world abounding with all types of innovation. Transparent procedures must involve new stakeholders to define common scientific and technical policies. This does not just involve "participative democracy", but also reference frameworks jointly constructed by heterogeneous stakeholders aiming to reduce the "double delegation" that separates experts from the uninitiated and citizens from their institutional representatives.

[7] The generalization of an evaluation that substitutes principle-based management with consequence-based management, shows how principles are being devalued to make way for a generation based on means and results.

*2.4 Debates on the disappearance of territories*

At first sight, none of these consequences lends value to territories – on the contrary: the mobility revolution, ubiquitous and interoperable digitalization in some respects signal the end of geography, in particular for the "digital natives". The "Society of the Individual" seems to relegate territorialized society to a historical shelf, where it is likely to survive as long as the nation-state and the town can resist the organization of space now defined by "inter" and "trans" (interurban, transnational, networks, etc.). The territory of the nation seems to be declining as citizens invent their present moment on the global scene. The market economy seems to be based on free circulation of production factors; all producers and consumers should ideally have access to these factors all over the globe, their globalized circulation ensuring their optimum mobilization.

Lastly, the new means of communication appear to allow stakeholder groups to form whose organization is no longer territorial (in the delimited sense) but of variable geometry, whereby territory is reduced to a contingent support role of which stakeholders require totally generic qualities to ensure hyper-accessibility (take the generalization of territorial equipment in communications networks, the convergence of towns' architectural and urban forms on every continent, and the increasing success of globally circulated food brands with no link to specific regions, etc.). As a general rule, the dematerialization of social activities (considerable rise in ideal functions of design and organization compared to the functions of material production, the role of ITCs, remote control of machinery) deterritorialize human activities. Networks appear to be the prime model for organizations while space is a simple support or outmoded observation framework. Although they are naïve and largely contradicted by the facts, these predictions raise interesting questions and add to the conceptual framework by bringing together much more pertinent notions of network, space and territory (Jessop et al, 2008).

The "network vs. territories" debate, now an old one, showed several limitations to the idea that networks might be superior to territories. The first of these is descriptive: networks certainly surpass territories built on a contiguity principle (like countries) but they do not replace them; networks have always existed and it would take a great many to beat a national organization that was significantly reinforced by 20th century economics. Secondly, criticisms of state territories' oppression no longer hold true: this land-based concept of power corresponds to a time when wealth was about owning land; however, property has since changed: it is now based on transferable, mobile securities; financial flows are the weapons of today's domination, and our fellow citizens are more likely to ask for protection against them. Lastly, on a political level, Pierre Hassner (1996) answered Bertrand Badie with the words, "We can imagine a world dominated by networks. But we cannot really see how they could produce a balance between affective identification and operating efficiency in which the contradictory needs of the soul and human society would find satisfaction". When Bertrand Badie gives the example of the dynamic thrust of East Asia's Chinese diaspora transcending traditional borders8, let us not forget that these Chinese people build up their system of mutual trust in the name of their community of origin.

Recent studies have shown the complementary nature of networks and territories, and in particular the way in which networks draw up new territories (see the crossed studies of the

[8] "The Chinese-influenced world by is increasingly marked by transboundary dynamics of all kinds in which financial flows, migratory flows and cultural flows form genuine trade circles that transcend state and national borders" Badie (*op.cit.).*

Latts and Géographie-Cités laboratories on the relationships between networks and territories). This is true at local, national and international scales: the Euro-Mediterranean region, if it ever comes to exist, will no doubt be mostly due to its gas and electricity energy networks. This interaction between networks and territories basically reformulates the notion of scale. It can even be the matrix of a structuring "dream", as the railways were for the Saint-Simonians in the "Mediterranean system" (Le Chevallier, 1832).

### *2.5 Keys to understanding territory*

As far back as 2001, Rogério Haesbaert denounced "the myth of deterritorialization", rejecting the overuse of formulas like "annihilation of space by time", which give a negative image to territories and make them obstacles to progress and mobility. He claims that rather than deterritorialization, we should talk of "multi-territorialization" i.e. the possibility, which has always existed but not in a contemporary context, to constantly rebuild our territory by trying out different territories at the same time.

Similarly, criticisms of purely modelled and "disembedded" society economics date at least from studies by Karl Polanyi (1983): It is impossible to abstract the circulation of production factors from the actual conditions of their generation, and in particular the institutional set-ups of each society. Territory provides a good approximation of the specific historical, cultural, political, legal and biophysical interaction through which society or individuals fit into the market. International relations experts say nothing different when they show that the realistic paradigm (founded on pure relationships of power between states) remains a fundamental key to understanding, even though it should now be accompanied by considering other international relations stakeholders working at infranational level (e.g. global towns) or supranational level (e.g. diasporas, NGOs, multinational companies).

Faced with these theses on the disappearance of territory, our position is as follows. The consequences of the different new paradigms mentioned above, i.e. the need to renew the unified representation of the social narrative, the new relations between substantive contents and the tools for producing them, and lastly the changing relationship between knowledge and society, all require an anchor point (both theoretical and practical) of which territory is actually one of the few possible forms. Far from just a simple support, territory is an operating instrument of common references and shared content, a common framework for action and inter-intelligibility that makes it possible to translate a range of scientific and social languages. An equivalent in the computing domain would be an operating system connecting several software programs.

### *2.6 CIST's ambitions*

The CIST founding symposium aimed not just to test out the idea that territories have not been outdone by the paradigms of hyper accessibility, free circulation of factors and the transgression of frontiers, but to show that they constitute an excellent key to understanding the transformations that these paradigms lead to. Seen through this lens, the qualities of territory are:

- *Delimitation* (marked out or gradual, including all of the challenges relating to thresholds, frontier impacts and internal-external relations) expresses the obstacle to hyper-mobility and hyper-accessibility; this obstacle can be specific to certain phenomena (e.g. the impact of distance on dissemination, the propagation of plant

seeds, or the dispersion of radioelements from a radioactive cloud), it can also be differentiated according to the social group (easy access for some, reduced access for others);

- Whether they are local or whether they connect different scales, *interactions* relate to the accessibility made possible by the territory in a specific, rather than generic, way; they describe for example, the specific concretization of a natural environment, or, on a socioeconomic level, the distinctive characteristic of modern territories that can become a genuine production factor (see the notion of the efficiency of organizations that Pierre Veltz[9] applies to territory). As mentioned above, territories' capacity to connect scales is at the heart of the relationship between "zone" and "network";

- The materiality or the *specificity of place* indicates a territory's absolute characteristics (biological, physical or social), which reduce the pertinence of modelling it (Sassen, 2006). This is the case for territories with exceptional physical characteristics; mathematized economics have difficulty considering the concrete space. This specific concretization has a crucial *temporal* dimension. To paraphrase Marcel Roncayolo, territories are "consolidated time", which means that they resist a definition of society as the sum of all possible combinations (society defined by its project), and refer back to the structuring inertia of former times (see the cultural tradition and the extent to which it resists outside influence, or the debateable notion of the "civilizational area"). For Pierre Veltz (op.cit.), territories are the "slow sugar" of growth, a way of resisting the tyranny of lack of time and making development long-lasting. Which does not mean that such a territory would never be subject to acculturation or that it would not behave like any other territory in the world: however, this interaction necessarily relates to its physical and constitutive social elements[10].

These three qualities: delimitation, interaction and specificity, exist elsewhere than in territories. However, what is specific to territories is that they are all characterized by these qualities as well as those resulting from their interface, i.e. the notions of "*environment*" (which results from the place's materiality and interactions), and "localization" (the place's delimitations and materiality). Together, they can define "*territoriality*".

Another set of qualities can define "territorialisation":

- *Representation* expresses a territory's capacity to depict a social narrative. The specificity of all territories and the effect of their interactions (whether expressed in landscape or local culture) make them particularly suited to playing this role. This could be at local, regional or national scale – we know to what point the universal political figure of modernity, the nation-state, is territorially composed; it could be at the scale of major regions ("Europe", etc.). This representation of territory, whether individual or collective, individual or shared, consensual or polemic, gives rise to expressions that go from simple mobilization of the territory as a factor of identity, to

[9] Veltz, 2005

[10] The return of Vidal de La Blache? The founder of the Geography Annals at the end of the 19th century, Vidal de La Blache studied the physico-social interactions that characterized each French region through what was known as the "natural science of lifestyles".

more or less violent demands, which sometimes spark numerous conflicts that have always existed;

- The *allocation* of resources, activities and responsibilities is mostly made via a territorial approach. Most major operators (companies, states, places of worship, international organizations, etc.) have a territorial strategy. The allocation of their resources also contributes to building or characterizing territories;

- Lastly, *mobilization* takes place not only, but also, through territories. Mobilization involves a unified representation of the social narrative and a sufficiently coherent material basis for action. Yet, the more complex the processes and the more diverse the actions, the more useful the link with territory. For example, to tackle the uncertainty inherent to globalization, companies need local, national or regional roots, which make it slightly easier to anticipate and give them easier current or potential access to rare resources (training systems, technological skills, relationships of trust relating to credit, etc., which explains the incessant dialectics between companies' deterritorialization and reterritorialization).

When it comes to representation and mobilization, territory is still the main basis of legitimacy. Territory makes it possible to meet inhabitants, to understand, to decide (role of elections, almost always linked to territory) and to act. Here, Pierre Hassner is right, and Facebook meets its limits. Individual social activities can have their own regulations and scale; *but political decisions i.e. arbitration, require a common denominator – which can be territory*. It is local and especially national, national not being a sum of local territories, since some issues make sense on a national scale (see the contribution of Laurent Davezies' studies on the geography of public economics), the borderline scale for a potential meeting with inhabitants and which currently offers the only genuine political legitimacy11. At a larger level, e.g. Europe, and even more so on a global scale, the question of legitimacy arises (see Pierre Rosanvallon's remarks on the limits of the technocratic leadership of globalization and on the lack of legitimacy of EU governing bodies). Debates on the reform of global governance involve the passage from G8 to G20, and according to the Stiglitz report on global financial governance, the need for a "G192" (i.e. the UN); they also relate to the move from nations to large regions (European Union, Mercosur, etc.) when it comes to representativeness at Bretton Woods international institutions. In any case, we can see that the debate on legitimacy is mostly centred on *territorial* levels.

For this reason, we can say that territoriality of processes and territorialisation of action, taken together, make territories a particularly informative key to understanding the issues of complexity: territories constitute a legible result, useful for both analysis and action.

## 3. Discipline, interdisciplinary field, scientific knowledge, or just a multidisciplinary object?

### *3.1 Crossing "territoriality" with "territorialisation"*

Two observations are required to understand the distinction between the notions of "territoriality" and "territorialisation". The former boils down to a cross-cutting situation at time *t*, whereas the latter designates dynamics of a longitudinal nature. This does not mean

[11] For Brighenti (2010), reinterpreting Michel Foucault, sovereignty-government is the ultimate territorial twosome

separating potential approaches of what would be "objective" and "subjective" in territories (or "instinctive" as opposed to "strategic"). Andrea Brighenti (2010) reminds us that territorial science cannot be a juxtaposition of an e.g. biological or ethological "determinist" approach to territories with a sociological "constructivist" approach12. Territories have both a functional side and a symbolic side to their representation, and these two sides interact. For example, taking the quality of "delimitation", we can see how it is also useful for analyzing territorialisation (representation, strategy, mobilization, etc.): it is about knowing who determines the delimitation of a territory, why and how.

### *3.2 Material and immaterial territories*

The second observation is that these qualities: accessibility and delimitation, interaction and the legibility of interactions, representation, legitimacy and mobilization of stakeholders, also characterize virtual spaces, which opens up rich perspectives on the crossed analysis of "material" territories and "immaterial" territories, once again via their interactions and not their juxtaposition. Brighenti insists on the relationship between territories' visible and invisible aspects, which he sums up with the idea of "stratification". The notion of "increased reality", based on the approach taken by McLuhan (1964) that the media is an extension of the materiality of exchanges, is a good metaphor for the connections between the two types of territory. That said, to attempt to understand cyberspace and its relation to material territories, we would need to respond to the assertion made by Godefridi (2011): "*Given the sea of information constantly being reinvented without anyone planning or wanting it, it would be useless to look for a satisfactory Cartesian architecture or even map it out*."

### *3.3 What objects, what interdisciplinarity?*

Our broad perspective interests a great number of scientific disciplines. Disciplines and fields based on a reference to space (geography and geopolitics, the environment, land planning, urbanism and architecture, urban history and urban sociology, urban and regional economics, development sciences and practices, etc.) make an essential contribution to understanding territories. However, the territorial science field is also of interest to many other social sciences (demographics, the sociology of public action, institutional economics, environment law, international law, etc.), as well as natural sciences (hydrology, geology, etc.), life sciences (biology, agronomics, health, etc.) and engineering sciences (geomatics, modelling complex systems).

The complex multidisciplinary cognitive objects likely to be enlightened through a territorial analysis grid are potentially numerous; for now, CIST's scientific committee has identified the following avenues:

- The relationship between the individual and the community (identity issues; individuation of practices and social fragmentation; policies to combat social inequality relating to people or territories, etc.);

- The new standards and regulations raised by globalization (new role of the state and multiplication of standards producers; overstepping of national regulations by the rise

[12] To use the term coined by a large group of authors, mainly historians, who interpret identity issues as politically and socially constructed processes: *Imagined Communities* (B. Anderson, 1983), *The Invention of Tradition* (E. Hobsbawm and T. Ranger, 1983), *Le Démon des origines* (H. Le Bras, 1997), *La Création des identités nationales* (A.- T. Thiesse, 1999), etc.

of local and transnational practices; common goods and governance involving multiple stakeholders, etc.);

- Temporality and ruptures in social, physical or biological events (vulnerability and risks; security, durability and resilience; prevention policies and crisis management; need for long-term planning in the face of accelerated social practices, etc.).

The symposium will determine what CIST's other objects should be.

*3.4 Simple scientific knowledge…*

The object and interdisciplinarity of territorial sciences are not the same depending on whether we consider these sciences as simple scientific knowledge or as an emerging discipline. In the first case (simple scientific knowledge), they are a set of scientific disciplines that we compare to understand, in a minimally harmonized manner, the territorial dimension of their own objects. The conceptual approach of the term "territory" will be discussed in order to understand any differences between disciplines, the consideration of space will obey rather similar methods, i.e. space delimitation criteria, measurements of interactions, the place of territories in social representations, the extent to which functional spaces and institutional spaces correspond, spatial analysis of the allocation of resources, etc. We should thus speak rather of "sciences of territories", or even speak of them as a simple *methodology*, by which territory serves to raise multidisciplinary questions that concern external disciplines.

Being less ambitious, we could even esteem that the *spatial turn* in particular shows progress made in diverse disciplines (history, economics, political science, biology, agronomics, climatology, etc.) and on the theme of territory reduced to a *simple multidisciplinary object*. The fact that territory is "fashionable" can perhaps be put down to the fact that the mobility revolution, the increasing constraints of human production on the biosphere, and the questioning of the traditional geographic framework of the nation-state raise a whole new set of territorial problems. In other words, could "sciences of the territories" not simply mean a *diversified field of territorial problems* posed to societies and existing scientific disciplines? And the *spatial turn* could simply be the capacity of different disciplines to comprehend territorial questions, rather than illustrating the pertinence of an autonomous field of "territorial sciences" currently being established.

"*Territoriology should be developed in an open field, through problems rather than through a discipline*" (Brighenti, op. cit.).

*3.5 … or on the contrary, an autonomous scientific field?*

If we consider that territory can be the object of an autonomous discipline, "territorial science", then we can define its concepts, laws and analysis methods. Researchers' energy should focus on actual territory rather than general major issues (the individual-community relationship, etc.), or more precisely, the latter will provide an opportunity to improve knowledge about territory as a scientific object. The resulting laws could, taking a hypothetico-deductive approach, highlight general empirical regularities in the way territories operate, but also reveal diversity thanks to an analysis of the differences with these general empirical laws. A territorial science should not give in to exceptionalism (i.e. all territories are different, no general proposal can be made about them), nor to determinism (i.e. a single

principle rules the way territories operate in all places and all times). In any case, it would be absurd to establish this type of science based only on the concept of territory, without at least associating space, networks and probably scale – with the risk of discovering that this territorial science would simply be a new name for a restructured geography.

As we know, the genealogy of science involves the disappearance or relegation of certain disciplines (philology or ancient studies old), and the emergence of new disciplines (computing, communications, etc.). Does not the importance of territorial issues justify a new specific discipline?

A slightly less ambitious case would be the constitution of a "science of the territories" as an interdisciplinary field. Many new sciences exist at the margins of several disciplines, either as bridging disciplines (biochemistry, astrophysics, etc.), or comprising several disciplines (cognitive science, etc.), for example, when the power of new means of investigation overrides traditional groupings[13]. The issue is thus to validate the consistency of this new extended scientific field centred on territories, and to verify whether the disciplines are grouped more solidly than they would be using simple analogies or common metaphors14.

One particular example is found in spatial planning. This field is both interdisciplinary and professional: it did not result from moving towards new scientific issues, but rather from taking on scientific studies made in several disciplines by *professional* stakeholders (promoters, land planners, transporters, local authorities, etc.). Internalizing the practices of these stakeholders in a field that is now hybrid, half-scientific and half-professional, allows us to consider the transformation of territories by these professionals, and of course, facilitates interactions between science and social demand. The fact that, faced with the paradigm of hyper accessibility, distance is a hindrance, a constraint and sometimes an opportunity (attraction for different territories, frontiers, etc.) makes territories a fundamental practical issue, which justifies a hybrid field like that of spatial planning.

### *3.6 The importance of interacting with social demand, the role of territorial information*

Whatever the case (scientific knowledge or field, even scientific discipline), the connection with social demand and professional practices is a strong characteristic of territorial sciences15, given the issues that connect territories to those involved in their transformation. *Territory is an important place to meet with social demand, and so with decision (elections) and action*. It is thus necessarily the object of requests to visualize the issues, tools to aid public debate and decision-making.

This is one of the reasons why *territorial information*, which is indispensable to creating these tools, *is also a central characteristic of territorial sciences*. No territorial data exist, but rather arrangements of territory-based information or, to use a more fashionable term, territorial ontologies. The conceptualization of territorial information is thus central to the formulation

[13] "It is based on the emergence and consideration of unresolved scientific problems or those with unexpected observations, made thanks to progress in theories, methods and technical procedures of experimentation and verification, which are progressively establishing a new field of investigation that was until now separated by the division of scientific work and its discipline-related institutionalisation" (Turmel, 1985)

[14] The experience of other interdisciplinary fields and/or other countries in terms of territorial sciences (e.g. the "Center for Spatially Integrated Social Science" at the University of Santa Barbara in California) will be of particular interest at the symposium.

[15] Until the conclusions of the symposium are made, we will continue to use this term

of scientific theories and involves making a distinction between what relates to hypotheses and their validation. Like social categories, political and administrative divisions are both a condition of observing reality and an aspect to be studied as such. More generally, the emergence of new geolocalized information sources (GPS) need to be theorized before any practical use can be made of them. Digitalization certainly facilitates the interoperability of data, and their integrated analysis can be used to understand the contemporary organization of space (network architecture, new functions of metropolitan hubs, spatialization of the practices of social groups, etc.). However, territorial information only appears capable of serving the "inclusive" function of territories if it is first subject to critical review.

## Conclusion

This empirical, methodological and theoretical work will no doubt make a significant contribution to answering the question of whether territorial sciences are a science, an interdisciplinary field or simply scientific knowledge. If it turns out that research on the concepts, sources, methods, use and promotion of territorial sciences defines the core of territorial sciences and conditions their dialogue with different disciplines, we would be justified in esteeming that it would have gained autonomy as a discipline ("territorial science"). However, if the result of this research remains restricted to setting up several protocols for processing territorial information applicable in a similar way by diverse disciplines, territorial sciences would then be limited to scientific knowledge.

Table 1. *Expected results of the symposium on the scientific status of territorial sciences*

| Technical status | Name | Content | Territorial information | Social demand |
|---|---|---|---|---|
| Multidisciplinary object | "territory" | Territory, analysis subject of an increasing number of varied scientific disciplines | Great diversity (even disorder) of sources and analysis methods | Contingent |
| Scientific knowledge | "Territorial sciences" | Territorial analysis methodology applicable to several disciplines | Work aimed at a degree of comparison of sources, concepts and methods | Consideration in the formulation of scientific questions |
| Interdisciplinary field | "Territoriology" | New scientific field straddling several disciplines | Compatible sources, concepts and methods; strong emphasis on visualization tools | Integral part of scientific field |
| Scientific discipline | "Territorial science" | New autonomous scientific discipline, assuming the scientific nature of "territory" as an object | IT is at the heart of the discipline; it leads to relations with other disciplines and with social demand | Integral part of scientific field |

Our conclusions on the above considerations leave us somewhat perplexed. This text ultimately only triggers a thinking process that is currently under way and is set to open up perspectives and respond to the contemporary challenges that new scientific paradigms attempt to tackle and resolve. We have observed how all scientific disciplines have been affected by the spatial turn. But that is only the start of the story. Theoretical paradigms and ways of "living together" converge into a new configuration, involving sciences and democracy in a world taking a new direction whose shape is still difficult to determine. As scientists, teachers and citizens, we are steeped in these transformations. The dough being

kneaded only gives a rough idea of the definitive shape of the cooked loaf. The fermentation process, working its secret alchemy, for the moment only gives a soft impression of its rich future. To use another metaphor, we could say that CIST's ambition is to be the yeast that will make it possible to establish territorial science.

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